

CLAIMS

We claim:

1. An apparatus for forming a single face corrugated paperboard web from a liner web and a corrugated medium web, the medium web being corrugated on a heated fluted bonding roll and having an adhesive applied to the flute tips while said medium web remains on said bonding roll, the liner web being brought into initial tangent contact with the glued flute tips of the corrugated medium on the bonding roll to form a composite single face web on said bonding roll, the improvement comprising:
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bonding roll, the improvement comprising:

a contact roll having an axis of rotation parallel to the rotational axis of the bonding roll and mounted downstream of the line of initial tangent contact to press the single face web against the bonding roll with a radial force distributed uniformly across the width of the single face web.

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10. The apparatus as set forth in claim 1 including a contact roll end support mechanism operative to vary the position of the contact roll radially with respect to the bonding roll.

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5. The apparatus as set forth in claim 2 wherein the contact roll comprises:
a center dead shaft including stub shaft ends connected to said end support mechanism; and,

an outer shell rotatably supported on said dead shaft by a plurality of axially spaced bearings.

4. The apparatus as set forth in claim 3 wherein said roll outer shell comprises a steel inner liner and a rubber outer cover.

5. The apparatus as set forth in claim 3 wherein said support mechanism comprises:

an eccentric coupling fixed to each stub shaft end, each coupling providing connection to a pivot shaft journaled for limited rotation on a pivot axis parallel to the axis of
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the dead shaft; and,

an actuator connected to each pivot shaft and operative to provide the limited rotation thereto to vary the position of the contact roll.

6. The apparatus as set forth in claim 5 wherein each actuator comprises a pneumatic cylinder having a cylinder rod end connected eccentrically to one of the pivot shafts.

7. The apparatus as set forth in claim 3 wherein the dead shaft includes a larger diameter axial center portion joining reduced diameter opposite end portions; and,

the outer shell having an axial center portion having a greater wall thickness joining opposite shell end portions of reduced wall thickness.

8. The apparatus as set forth in claim 7 wherein the axial center portion of said dead shaft and said outer shell are approximately equal in axial length.

9. The apparatus as set forth in claim 8 wherein the outer shell is rotatably supported by a pair of bearings positioned adjacent the ends of the axial center portion of the outer shell and the dead shaft.

10. In a single facer apparatus for forming a single face corrugated paperboard web from a liner web and a corrugated medium web, said apparatus including a fluted bonding roll on which the medium web is corrugated, a glue applicator that applies an adhesive to the flute tips of the corrugated medium web while the medium web is on the bonding roll, and a generator roll that brings the liner web into initial tangent contact with the glued flute tips of the corrugated medium web on the bonding roll to form the single face web, a method for enhancing the glue bond between the medium web and the liner web comprising the steps of:

(1) positioning a rotatable contact roll on a rotational axis parallel to the axis of rotation of the bonding roll closely adjacent and downstream of the generator roll;

(2) mounting said contact roll for movement radially with respect to the bonding roll into contact with the single face web on the bonding roll; and,

(3) loading said contact roll against the single face web with a force uniformly distributed across the width of said web.

11. The method as set forth in claim 10 wherein said loading provides a force of about 5 pounds per lineal inch of web width.

12. The method as set forth in claim 10 wherein the adhesive is a starch adhesive and including the step of heating the bonding roll.

13. The method as set forth in claim 10 including the step of providing said contact roll with a coating of a rubber-like material.